

IN THE CLAIMS:

Please cancel claims 2-61 and add the following new claims.

1. (Previously presented) A heart assist device adapted for implantation into a patient, the device including:

a) an aortic compression means is so shaped and dimensioned that it is adapted, when actuated, to compress the ascending aorta of a patient;

b) a fluid reservoir; and

c) an electrically powered pump means adapted to pump a fluid from the fluid reservoir to the aortic compression means so as to actuate the aortic compression means at least partly in counterpulsation with the patient's heart,

the fluid reservoir and pump means are so shaped, dimensioned and interconnected that they are adapted to be wholly positioned within the right chest cavity of the patient.

2-61. (Cancelled)

62. (New) A device as claimed in claim 1, wherein the fluid is a liquid.

63. (New) A device as claimed in claim 62, wherein the liquid is water of saline.
64. (New) A device as claimed in claim 1, wherein the aortic compression means is curved along its length so as to substantially replicate the curve of the aorta adjacent to the aortic compression means.
65. (New) A device as claimed in claim 1, wherein the aortic compression means includes an elastic inflatable cuff adapted to at least partly encircle the aorta.
66. (New) A device as claimed in claim 65, wherein the cuff is adapted to completely encircle the aorta.
67. (New) A device as claimed in claim 65, wherein the cuff is substantially C-shaped and includes two free ends that are adapted to overlap when the cuff is placed around the aorta.
68. (New) A device as claimed in claim 67, wherein one of the free ends includes an elongated tongue adapted for suturing in an overlapping relationship to the other end to retain the device adjacent the aorta.

69. (New) A device as claimed in claim 65, wherein the cuff is a snug fit around the aorta of the patient.

70. (New) A device as claimed in claim 1, wherein the pump means and the fluid reservoir are provided in a fluid-filled substantially air-tight housing.

71. (New) A device as claimed in claim 70, further including a pressure compliance means.

72. (New) A device as claimed in claim 71, wherein the pressure compliance means forms part of the housing.

73. (New) A device as claimed in claim 72, wherein the pressure compliance means is a substantially rigid portion of the housing downstream of the pump means, the portion being of sufficient rigidity so as to not deform inwardly during aortic compression nor deform outwardly in the absence of aortic compression.

74. (New) A device as claimed in claim 72, wherein the pressure compliance means is a substantially flexible portion of the housing downstream of the pump means, the portion being of sufficient flexibility so as to deform inwardly during aortic compression and deform outwardly in the absence of aortic compression.

75. (New) A device as claimed in claim 74, wherein the flexible portion is adapted to be positioned in juxtaposition with a lung of the patient and deform outwardly to slightly compress the lung in the absence of aortic compression.

76. (New) A device as claimed in claim 75, wherein the cuff has a single inlet/outlet port.

77. (New) A device as claimed in claim 76, wherein the port has a diffuser therein.

78. (New) A device as claimed in claim 76, wherein the housing has an inlet/outlet port opening in fluid communication with the cuff inlet/outlet port.

79. (New) A heart assist device adapted for implantation into a patient, the device including:

a) an aortic compression means adapted, when actuated, to compress the ascending aorta of a patient;

b) a liquid reservoir;

c) a pump means adapted to pump a liquid from the liquid reservoir to the aortic compression means so as to actuate the compression means, the liquid reservoir and the aortic compression means being adapted to be positioned in close juxtaposition with one another within the chest cavity of the patient, and

d) means to sense the pressure in the liquid in the absence of aortic compression and alter the sensed pressure to a predetermined pressure.

80. (New) A device as claimed in claim 79, wherein the distance between the liquid reservoir and the aortic compression means is no more than 6 cm.

81. (New) A device as claimed in claim 79, further including a pressure compliance means.

82. (New) A device as claimed in claim 81, wherein the liquid reservoir, the pump means and the pressure compliance means are provided in an air-tight housing.

83. (New) A device as claimed in claim 82, wherein the housing is fluid-filled and the liquid reservoir is a portion of the interior of the housing.

84. (New) A device as claimed in claim 82, wherein the pressure compliance means is a flexible portion of the housing adjacent the liquid reservoir.

85. (New) A device as claimed in claim 84, wherein flexible portion is adapted for positioning in juxtaposition with the lung of the patient.

86. (New) A heart assist device including:

a) an aortic compression means adapted by its shape and dimensions to be placed around the aorta of a patient; and

b) mechanical or electrical actuation means to periodically actuate the aortic compression means in at least partial counterpulsation with the heart,

wherein the aortic compression means and the actuation means are placed wholly within the right chest cavity of the patient.

87. (New) A device as claimed in claim 86, wherein the aortic compression means and the actuation means are adapted to be connected in close juxtaposition within the right chest cavity of a patient.

88. (New) A device as claimed in claim 86, wherein the aortic compression means is inflatable to compress the aorta and the actuation means includes a pump means adapted to pump fluid into the aortic compression means to inflate same.

89. (New) A device as claimed in claim 88, wherein the actuation means further includes a fluid reservoir and a pressure compensation means.

90. (New) A device as claimed in claim 89, wherein the pump means, fluid reservoir and the pressure compensation means are connected in a fluid-filled air-tight housing.

91. (New) A device as claimed in claim 86, wherein the pump means, fluid reservoir and the pressure compensation means are connected in a fluid-filled air-tight housing.

92. (New) A device as claimed in claim 88, wherein the pump means is a fluid-filled sac adapted to be compressed to drive fluid from the sac to the aortic compression means.

93. (New) A device as claimed in claim 88, wherein the aortic compression means is an inflatable cuff adapted for positioning about the aorta of the patient.

94. (New) A heart assist device as claimed in claim 1 when placed in a human or other animal.



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Respectfully submitted,

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